

Work Order ID 80471

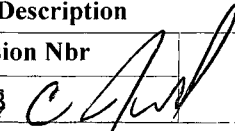
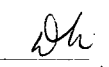


80471

Page 1

February-21-12 1:47:11 PM

Item ID: D3676-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Bubble Window
 Start Date: 21/02/2012 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 06/03/2012 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12/02/21 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3676	Rev <u>B</u> 								
100		0.00							
100	HAND FINISHING THERMOFORMING								
Thermoform	Memo	0.00				x 2			
Thermoforming Machine	Set up Machine as per folio FTA 018 and D3676 program								12/03/09
110		0.00							
110	HAND FINISHING THERMOFORMING								
Thermoform	Memo	0.00				x 2			
Thermoforming Machine	Cut Blanks to 38" by 52"								12/03/09
120		0.00							
120	THERMOFORMING MACHINE								
Thermoform	Memo	0.00				x 2			
Thermoforming Machine	Thermoform as per Dwg. D3676 and Folio FTA 018Dwg. Rev. <u>C</u> Folio Rev. <u>C</u>								12/03/09

PIC →

W/O: 80471		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3676-1 PAR #: _____ Fault Category: Thermal NCR: Yes No DQA: Full Date: 12/03/23
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: OK Date: 12/3/23

NCR: 12-1282		WORK ORDER NON-CONFORMANCE (NCR) 492.59						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/03/10	120	PART BLISTERED EL PROSS	<u>S</u> 12/03/10 257042	Reduce heat to 330F. Scrap & Replace 1 part	<u>Sh.</u> 12/03/10	<u>S</u> 12/03/10	<u>S</u> 257042 12/03/10	<u>S</u> 12/03/10

NOTE: Date & initial all entries

Page 2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC2- Inspect parts off machine FAI/FAIB	0.00							
* 130*						X /			JL
QC	Memo	0.00							
Quality Control	1) Check Surface finish for undesired marks, voids, dimples etc.2) Check depth of bubble to ensure conformity to drawing tolerances.								12/03/10
140	QC8- Inspect parts - second check	0.00							
* 140*						X /			B
QC	Memo	0.00							
Quality Control									12/03/10
150	HAND FINISHING THERMOFORMING	0.00							
* 150*						X /			B
Thermoform	Memo	0.00							
Thermoforming Machine	1) Trim off excess flange material2) Buff out any light scratches or blemishes3) Etch part number and batch number								12/03/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

80471

February-21-12 1:47:11 PM

N900040100

Setup Start *NS1*

Stop *NS2*

*** 1 ***

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

0.00

160

QC Memo

0.00

Quality Control

DL
12/03/15

0.00

170

QC Memo

0.00

Quality Control

1) Visually inspect for clarity, and proper formation.

m 12 03 22 (1)
for Eric

0.00

180

Packaging Memo

0.00

Packaging

PP 81608

6/23/22 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 80471***80471***

Page 4

February-21-12 1:47:11 PM

Item ID: D3676-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bubble Window
Start Date: 21/02/2012 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 06/03/2012 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

MLG 12/03/22

12-03-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February-21-12 1:47:15 PM

Page 1

Work Order ID: 80471

80471

Parent Item: D3676-1

D3676-1

Parent Item Name: Bubble Window

Start Date: 21/02/2012

Required Date: 06/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev A New Product 01/24/2008 DL Verified:JLM
IPP Rev B Change Mat. to .236"" 08/29/2008 DL

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MACRLICS.236		Purchased		No		110	sf	158.3138	13.75	13.75688			

MACRLICS 236

Plexiglass G .236"

**

Location

therm

119347

Loc Qty

158.313834

158.313834

Loc Code

27.51376 sq ft

12/03/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:
Description:		Part Number: 3676-1
Inspection Dwg: 3676	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than "	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: 

Date: 12/03/15

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
29.1		29.25	✓			
46		46.1	✓			
17	I .05	17.375	✓			
.090		.110	✓			
.070		.093	✓			
.050		.069	✓			

Measured by: 

Date: 12/03/15

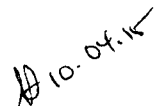
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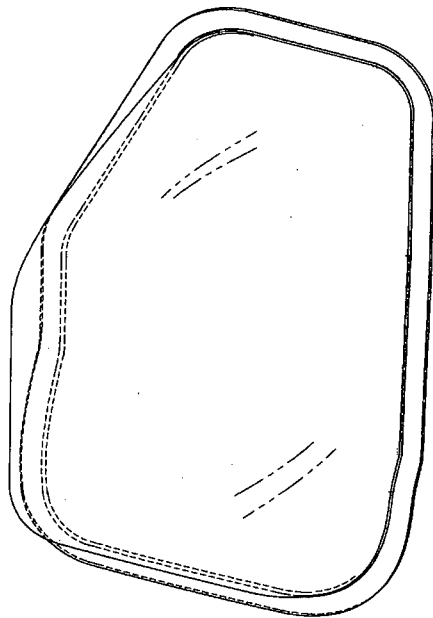
Date: 12/03/15

Preliminary Approval:

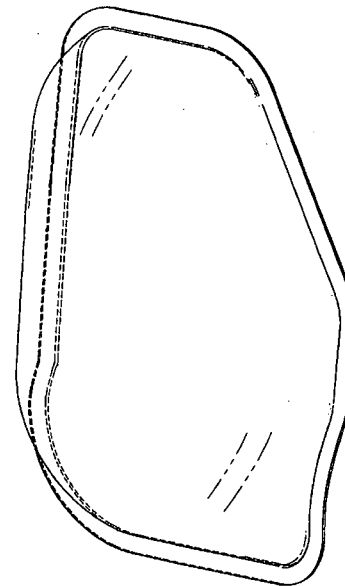
Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

 10.04.14



D3676-1 FULL HEIGHT BUBBLE WINDOW (LH)

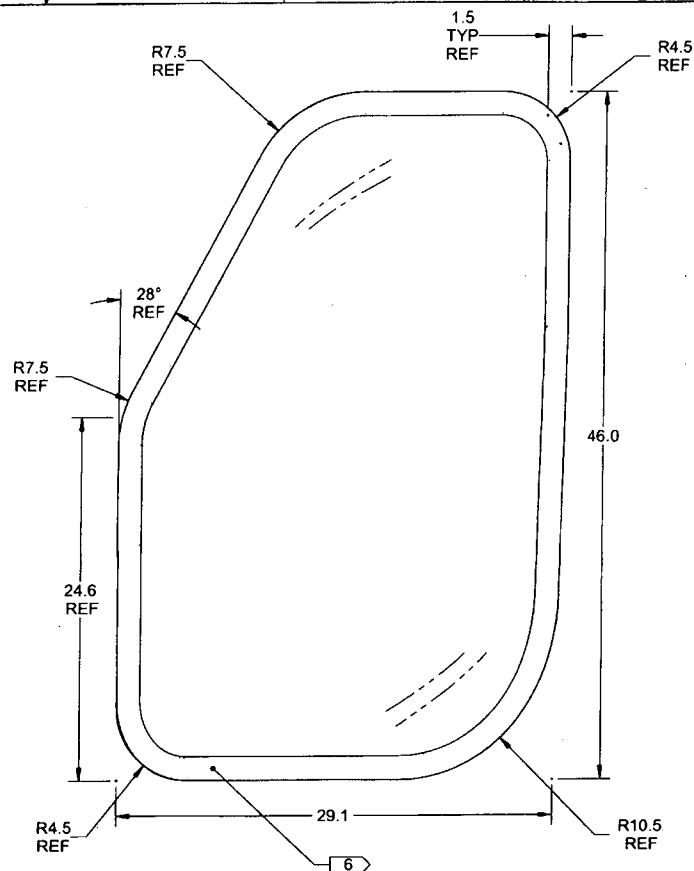
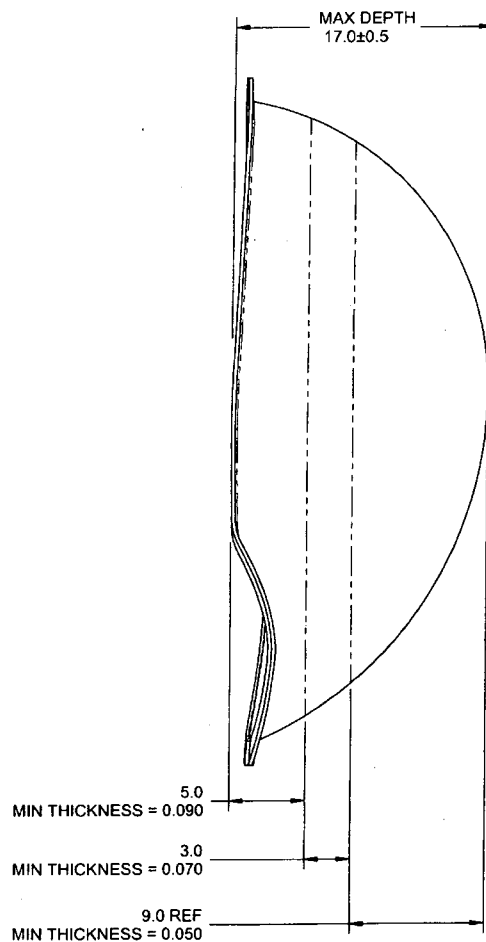


D3676-2 FULL HEIGHT BUBBLE WINDOW (RH)

00471

RELEASED
2012-03-08

REV.	DESCRIPTION	BY	DATE
C	ADDED D3676-2 FULL HEIGHT BUBBLE WINDOW (RH). REMOVED NOTES ON SHEET 1, REFORMAT NOTES 6 & 8 ON SHEET 2, D3676-1 WAS "412 BUBBLE WINDOW" NOW "FULL HEIGHT BUBBLE WINDOW (LH)".	AP	12.03.01
B	REVISED TOLERANCE ON MINIMUM THICKNESSES (ZN A8/B8-2). REASON: PRODUCTION FACILITY.	MB	08.10.27
A	NEW ISSUE	MB	08.02.28
DESIGN	MB	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3676 REV. C SHEET 1 OF 3 TITLE FULL HEIGHT BUBBLE WINDOW SCALE NTS COPYRIGHT © 2012 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DRAWN	AP		
CHECKED	SEP		
MFG. APPR.	JVS		
APPROVED	MB		
DE APPR.	#	DATE 12.03.01	
DATE	12.03.01		



D3676-1 FULL HEIGHT BUBBLE WINDOW (LH)

20471

RELEASED
2012-03-08

NOTES:

- 1) MATERIAL: PLEXIGLASS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425,
0.236 THICK (REF. DART SPEC. M-ACRYLIC-S.236)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: ENGRAVE P/N "D3676-1" & B/N "BXXXX" ON FLANGE WITHIN 0.25" OF BUBBLE.
USE 0.125" LETTERS TO MAX. DEPTH OF 0.005" PER DART QSI 044 6.4 WITH VIBRATING STYLUS.
- 7) WEIGHT: 11.0 lbs
- 8) THERMOFORM PER DART QSI 022 USING DT8992

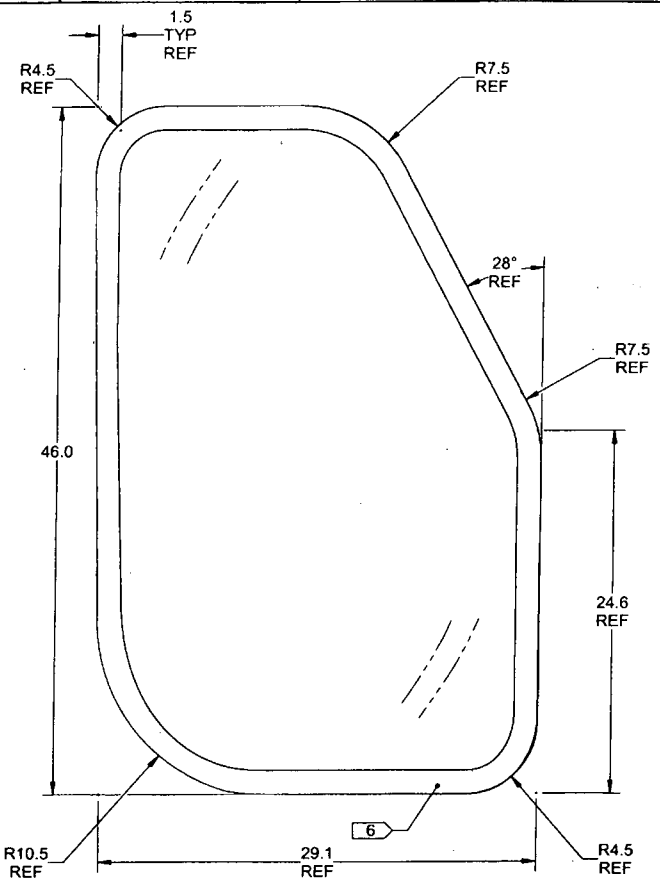
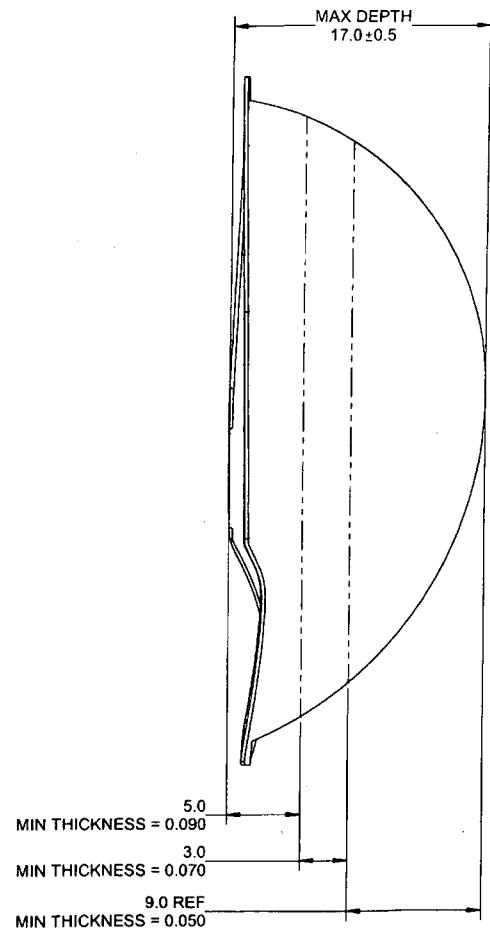
DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	SP	DRAWING NO.	REV. C
MFG. APPR.	SP	D3676	SHEET 2 OF 3
APPROVED	SP	TITLE	SCALE
DE APPR.	SP	FULL HEIGHT BUBBLE WINDOW	NTS
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8 7 6 5 4 3 2 1

D

C

B



2047

D3676-2 FULL HEIGHT BUBBLE WINDOW (RH)

RELEASED
2012-03-08

NOTES:

- 1) MATERIAL: PLEXIGLASS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425,
0.236 THICK (REF. DART SPEC. M-ACRYLIC-S.236)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: ENGRAVE P/N "D3676-2" & B/N "BXXXX" ON FLANGE WITHIN 0.25" OF BUBBLE.
USE 0.125" LETTERS TO MAX. DEPTH OF 0.005" PER DART QSI 044 6.4 WITH VIBRATING STYLUS.
- 7) WEIGHT: 11.0 lbs
- 8) THERMOFORM PER DART QSI 022 USING DT9794

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	AP	D3676	SHEET 3 OF 3
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	FULL HEIGHT BUBBLE WINDOW	NTS
DATE	12.03.01	COPYRIGHT © 2012 BY DART AEROSPACE LTD	
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8 7 6 5 4 3 2 1